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Studies in Applied Finance

**INVESTMENT THESIS FOR
ACTIVISION BLIZZARD, INC.
(NASDAQ: ATVI)**

Andrew Ravan

Johns Hopkins Institute for Applied Economics,
Global Health, and the Study of Business Enterprise



Investment Thesis for Activision Blizzard, Inc. (NASDAQ: ATVI)

By Andrew Ravan

Disclaimer: These research reports are primarily student reports for academic purposes and are not specific recommendations to buy or sell a stock. Potential investors should consult a qualified investment advisor before making any investment. This study was completed in December 2016.

About the Series

The Studies in Applied Finance series is under the general direction of Professor Steve H. Hanke, Co-Director of the Johns Hopkins Institute for Applied Economics, Global Health, and the Study of Business Enterprise (hanke@jhu.edu) and Dr. Hesam Motlagh (hesamnmotlagh@gmail.com), a Fellow at the Johns Hopkins Institute for Applied Economics, Global Health, and Study of Business Enterprise.

This working paper is one in a series on applied financial economics, which focuses on company valuations. The authors are mainly students at the Johns Hopkins University in Baltimore who have conducted their work at the Institute as undergraduate and graduate researchers.

About the Author

Andrew Ravan (aravan1@jhu.edu) is a sophomore at The Johns Hopkins University. He conducted the research for this paper while serving as Prof. Hanke's research assistant at The Johns Hopkins Institute of Applied Economics, Global Health, and the Study of Business Enterprise during the Fall of 2016. Andrew is graduating in May 2019 with a major in Economics.

Summary

This working paper is an in-depth analysis Activision Blizzard, Inc. Our analysis examines the factors that impact ATVI's underlying business. This economic analysis is then combined with our unique Probabilistic Discounted Cash Flow (P-DCF) model to determine ATVI's financial position. The P-DCF model will be presented along-side Monte-Carlo simulations to reveal the distribution of probable free cash flows and the likelihood of future earnings. We also studied the proxy report to examine the compensation practices of ATVI and determine whether they are well-aligned with shareholder interests. Our objective is for readers to understand ATVI's business plan and financial standing to construct a sound investment decision.

Acknowledgements

Many thanks to Prof. Steve H. Hanke and Dr. Hesam Motlagh for guidance and draft comments. Additional thanks to Tal Boger and Ed Li for draft comments.

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JEL codes: C63, G11

ACTIVISION

BLIZZARD™

Rating: **BUY** - Average Free Cash Flow per Share: \$43.63

Company Name:	Activision Blizzard, Inc.
NASDAQ Symbol:	ATVI
Contributors:	Andrew Ravan
Date:	12/1/16
Fiscal year ends (current period):	Dec. 31, 2016
Current Price:	\$35.58
52 week high:	\$45.55
52 week low:	\$26.49
Market Cap:	\$26.54B
Enterprise Value:	\$28.87B
Total Debt:	\$6.36B
Cash:	\$4.029B
Net Debt/Enterprise Value	14.00%
Dividend	\$0.26
Diluted Shares Outstanding:	743.2M
Current P/E	31.71
2018 P/E (EPS)	18.17 (2.44)
2017 P/E (EPS)	20.38 (2.17)
2016 P/E (EPS)	22.29 (1.99)
2015 EPS	1.19
2014 EPS	1.13
2013 EPS	0.95

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Executive Summary

Activision Blizzard, Inc. (NASDAQ: ATVI, herein referred to as “ATVI” or the “Company”) is a leading global developer and publisher of interactive entertainment. The company currently offers games for video game consoles, personal computers (PC), and handheld (mobile and tablet) devices. ATVI maintains significant operations in the United States, Canada, the United Kingdom, France, Germany, Ireland, Italy, Sweden, Spain, the Netherlands, Australia, South Korea, and China. Based on historical averages and recent statements from ATVI’s management, our Proprietary Discounted Cash Flow (P-DCF) model in conjunction with Monte Carlo simulations reveal that ATVI’s probable free cash flow generation, on a per-share basis, is \$43.63. Our model takes into account the historical trends in Activision Blizzard’s value drivers, such as cost of sales, product development, sales and marketing, and general and administrative costs. Additionally, ATVI’s revenue guidance for 2016 is \$6.13 billion, a 31% year-over-year increase. As of December 1, 2016 ATVI shares are trading at \$35.58, at a 22.63% discount compared to our model estimates. Historical performance and expectations of booming growth in the video gaming industry reassure us that we can expect future appreciation in the Company’s stock price. Management’s ability to allocate capital to effectively drive shareholder return – particularly through their acquisition of King Digital Entertainment, PLC – is reflective of The Company’s continuing potential. Considering ATVI’s strong business model, competitive advantages, and the company’s per-share price discount, relative to our P-DCF model, we consider the security to be an exceptional investment opportunity. Therefore, we are rating ATVI a BUY.

Catalysts and Risks

- P-DCF model shows that there is currently a significant margin of safety on the ATVI security
- Overreaction by investors to management’s revised-down Q4 2016 earnings is not reflective of the Company’s solid business model and performance
- ATVI’s stock price is highly sensitive to their quarterly earnings and revenue performance, as seen by the dip and spike in the security price for the first and second quarters respectively
- Growth play: global video game industry expected to grow at 4.8% compounded annual growth rate (CAGR), to reach \$90 billion by 2020
- General macroeconomic slowdown, and/or market downturn, could have drastically negative effects on ATVI’s stock price

Company Description

ATVI is one of the largest gaming and entertainment companies in the world. The current Company structure was founded in 2008 when Vivendi Games and Activision merged. ATVI includes five business units: Activision Publishing, Blizzard Entertainment, Major League Gaming, Activision Blizzard Studios, and King Digital Entertainment. The Company’s three main units are Activision Publishing Inc. (herein referred to as Activision),

Blizzard Entertainment Inc. (herein referred to as Blizzard), and King Digital Entertainment PLC (herein referred to as King).

Through its Activision segment, ATVI is a leading international developer and publisher of interactive software products and content. Activision develops, markets and sells products through their retail channels or digital downloads, which are principally based on internally developed intellectual properties, as well as some licensed properties. Call of Duty is one of Activision's leading franchises, which launched in 2003, and has been the best-selling Western interactive franchise since its launch.

Blizzard is a leader in online PC gaming, including the subscription-based massively multi-player online role-playing game (MMORPG) category in terms of subscriber base and revenues generated through its World of Warcraft franchise. Blizzard generates revenues worldwide through the following means: subscriptions; sales of prepaid subscription cards; in-game purchases and services; retail sales of "boxed" products; online download of sales of PC products; purchases and downloads via third-party console; mobile and tablet platforms; and licensing of software to third-party companies that distribute Blizzard products.

King created interactive entertainment for the mobile world. This unit has over 200 titles, including Candy Crush, Farm Heroes, and Pet Rescue. ATVI acquired King in 2016 for \$5.9 billion.

ATVI is headquartered in Santa Monica, CA and generated over \$4.6 billion in sales in 2015. The Company is traded on the NASDAQ, and falls into the 'Computer and Video Games Interactive Entertainment' industry. The Company joined the Standard & Poor's 500 index during Q3 of 2015, becoming only the second video game company to be part of the index (Electronic Arts being the first).

Business Segments

ATVI frequently realigns their business segments. Most recently, The Company has divided their business into the following four operating segments:

- Console
 - o Products that fall in this business segment operate on the PS4, PS3, Xbox One, Xbox 360, Wii U, and Wii console systems
 - o Call of Duty: Black Ops III was the #1 best-selling console game in 2015
 - o The 'Console' business segment has consistently accounted for approximately 50% of ATVI's revenue since 2008
- Online
 - o ATVI is a leader in online PC gaming, through its subscription-based massively multi-player online role-playing game ("MMORPG") category in its World of Warcraft® franchise

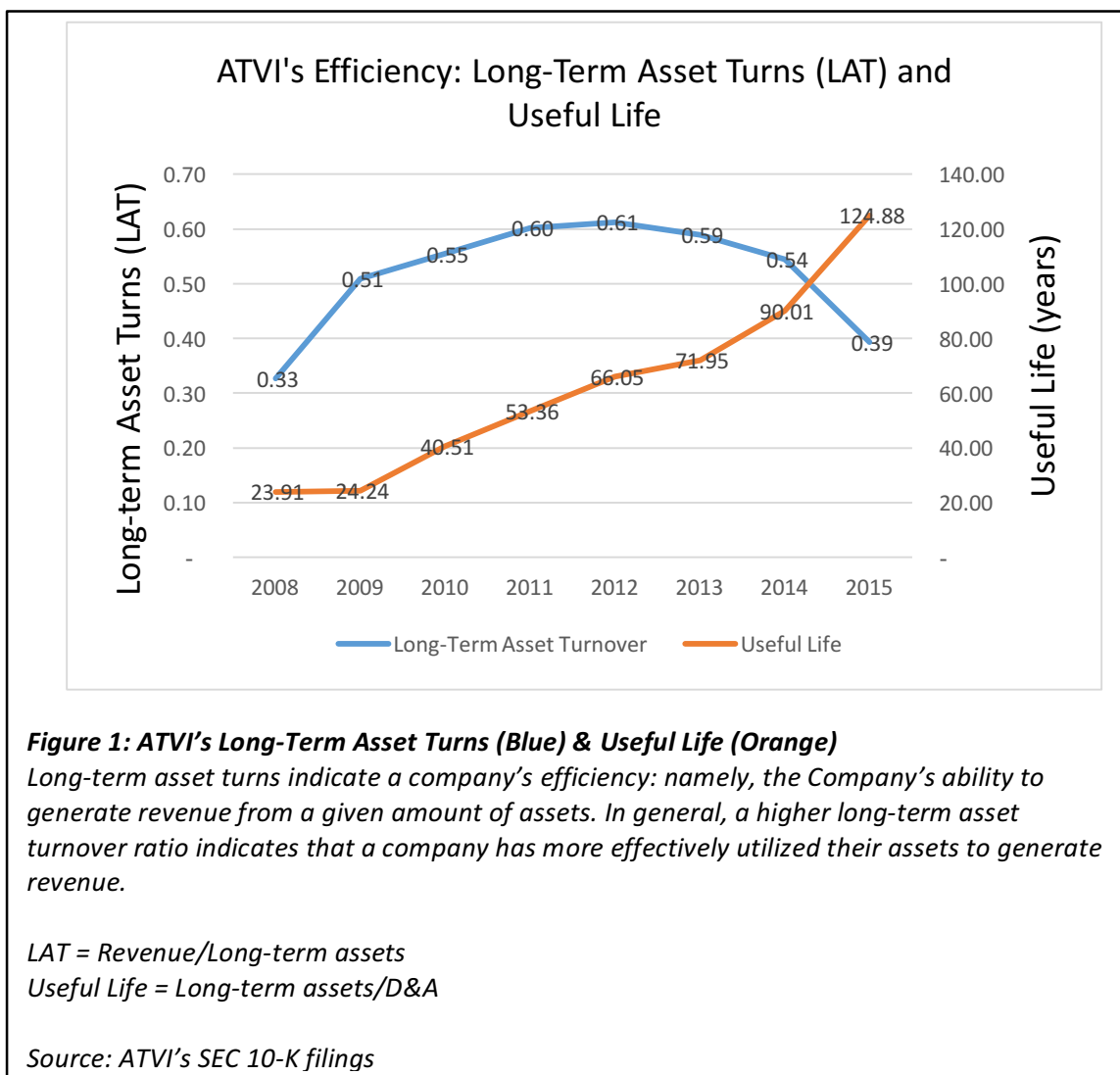
- Revenues from ATVI's 'Online' segment are generated from: World of Warcraft® products
- Revenues include subscriptions, boxed products, expansion packs, licensing royalties, and value-added services
- Skylanders SuperChargers® includes online multiplayer gameplay
- Destiny® is an online universe of first-person action gameplay
- The margin on total revenue for the 'Online' business segment has consistently decreased from approximately 38% in 2008 to 18% in 2015
- PC & Other
 - World of Warcraft is the #1 PC franchise by lifetime revenues
 - Diablo III® was released for the PC in China in 2015
 - Net revenues from PC increased in 2015, YoY, due to higher revenues from Hearthstone: Heroes of Warcraft® and Heroes of the Storm®
 - The margin on total revenue for the 'PC & Other' business segment has consistently increased from approximately 3% in 2008 to approximately 22% in 2015
- Mobile & Ancillary
 - This segment includes revenues generated from: handheld, mobile and tablet devices; non-platform specific game-related revenues such as standalone sales of toys and accessories products from ATVI's Skylanders® franchise
 - The acquisition of King Digital Entertainment PLC was targeted at increasing revenues for this business segment
 - The margin on total revenue for the 'Mobile & Ancillary' segment has consistently decreased from approximately 15% in 2008 to approximately 9% in 2015

Historical Performance

Over the last 8 years, ATVI has grown their revenue at a 5.63% compound annual growth rate (CAGR) (Table 1).

Table 1: ATVI's 8 Year Revenue Breakdown (Source: Company Filings, SEC 10-K)

Year	2008	2009	2010	2011	2012	2013	2014	2015
Revenue by Segment								
Console	\$1,294	\$2,199	\$2,330	\$2,439	\$2,186	\$2,379	\$2,150	\$2,391
Revenue Growth Rate (%)		41.16%	5.62%	4.47%	-11.57%	8.11%	-10.65%	10.08%
Margin on Total Revenue (%)	43.00%	51.40%	52.39%	51.29%	45.02%	51.91%	48.77%	51.27%
Online	\$1,152	\$1,248	\$1,230	\$1,357	\$986	\$912	\$867	\$851
Revenue Growth Rate (%)		7.69%	-1.46%	9.36%	-37.63%	-8.11%	-5.19%	-1.88%
Margin on Total Revenue (%)	38.29%	29.17%	27.66%	28.54%	20.30%	19.90%	19.67%	18.25%
PC & other	\$99	\$164	\$325	\$374	\$1,214	\$663	\$958	\$1,004
Revenue Growth Rate (%)		39.63%	49.54%	13.10%	69.19%	83.11%	30.79%	4.58%
Margin on Total Revenue (%)	3.29%	3.83%	7.31%	7.87%	25.00%	14.47%	21.73%	21.53%
Mobile & ancillary	\$464	\$667	\$562	\$585	\$470	\$629	\$433	\$418
Revenue Growth Rate (%)		30.43%	18.68%	3.93%	-24.47%	25.28%	-45.27%	-3.59%
Margin on Total Revenue (%)	15.42%	15.59%	12.64%	12.30%	9.68%	13.72%	9.82%	8.96%
Total Revenue	\$3,009	\$4,278	\$4,447	\$4,755	\$4,856	\$4,583	\$4,408	\$4,664
Revenue Growth Rate (%)		42.17%	3.95%	6.93%	2.12%	-5.62%	-3.82%	5.81%



We calculated ATVI's Long-Term Asset Turns and Useful Life in order to analyze The Company's efficiency in generating revenue from their assets. After hitting its peak in 2012, ATVI's Long-Term Asset Turns have been decreasing for the past 4 years (Figure 1). The drop in LAT from 2012 to 2013, and again from 2013 to 2014, can be explained by ATVI's negative total revenue growth in 2013 and 2014. The more drastic drop in LAT from 2014 to 2015 can be explained by the fact that ATVI's "Cash in escrow" increased by \$3.56 billion in 2015, causing The Company's total long-term assets to spike. According to ATVI's 2015 10-K annual report, the \$3.56 billion "Cash in escrow" was tied to the acquisition of King Digital Entertainment Plc.

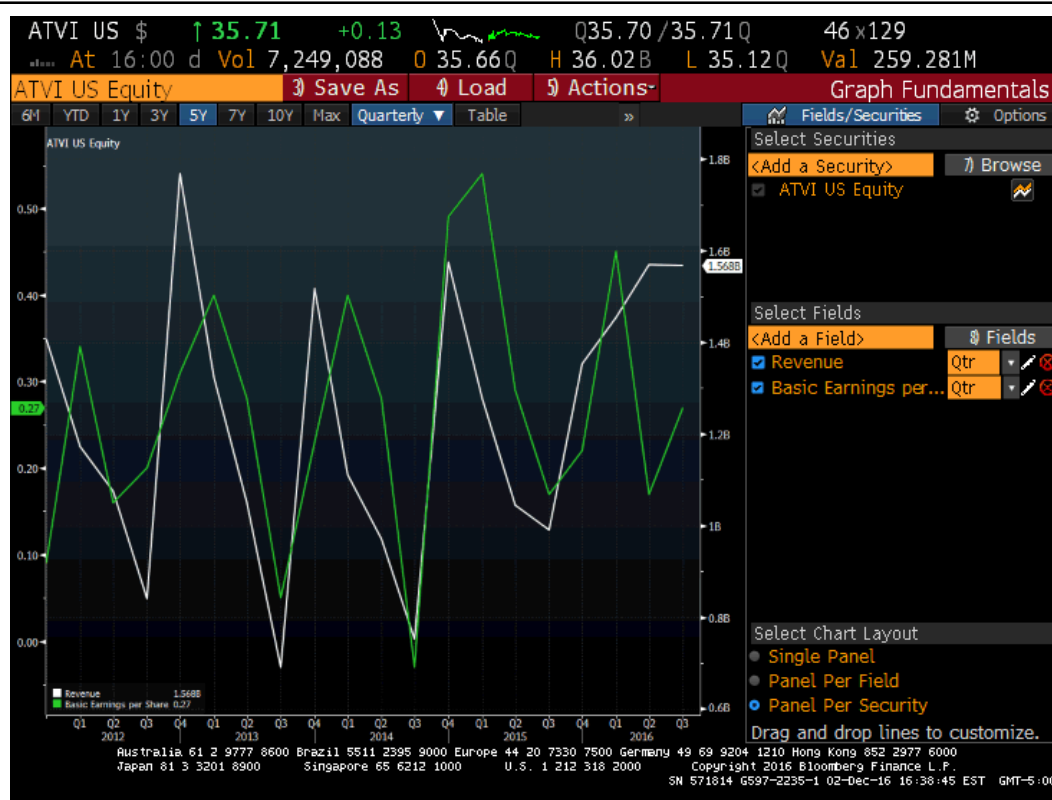


Figure 2: ATVI's Revenue (White) & EPS (Green)

The spikes and dips of the Company's revenue and earnings per share indicate the cyclical nature of ATVI's business. The spikes generally occur during Q4, as the holiday season brings in higher revenues for ATVI.

Source: Bloomberg Terminal. Command: <GP>. Accessed 12/1/2016

Figure 2 gives us insight into ATVI's cyclical nature, and where their business model allows them to generate huge revenue numbers: holiday video game gifts. It is clear that sales during the holiday season determine a significant portion of the overall business sales for each year. Thus, it comes as no surprise that the stock may appreciate or depreciate significantly from quarterly earnings which may glean insight into the overall health of the video game market. Despite these fluctuations, it is clear that ATVI has demonstrably outperformed the market.



Figure 3: 5 Year Historical Stock Performance

ATVI's 5 Year Historical Line Chart (White) vs. SPX Index (Green), including ATVI's quarterly earnings performances.

Source: Bloomberg Terminal. Command: <GP>. Accessed 12/1/2016

This can be appreciated by inspection of Figure 3. Since 2011, ATVI has rewarded its shareholders sizably, to the tune of an approximate 200% total return. This growth produced approximately 2.7 times the returns of the Standard and Poor's 500 (75%), and outpaced the NASDAQ's growth (101%) by approximately two-fold. Despite this out-performance over a five-year period, the stock has recently pulled back over 20% due to fears of weak Call of Duty: Infinite Warfare sales during the holiday season.



Figure 4: 1 Year Historical Stock Performance

ATVI's 1 Year Historical Line Chart (White) vs. SPX Index (Green).

Source: Bloomberg Terminal. Command: <GP>. Accessed 12/1/2016

Specifically, this sell off seems to have started around approximately October 24, 2016. This sell-off is also due to management's decision to revise down on The Company's Q4 earnings estimates. Q4 is historically ATVI's strongest quarter – the holiday season brings in huge sales, as video games are bought on a large scale. This fact may explain the reaction to management's decision to revise down on their final quarter's earnings estimates (down to \$0.05 per share). As we can see on the 1-year stock chart above (Figure 4), ATVI's price and return profile has diverged from the S&P Index's upward trend since this news hit the markets. This news, and subsequent stock price drop, has catalyzed the gap in the security's currently traded price and our target price, acquired from our proprietary P-DCF.

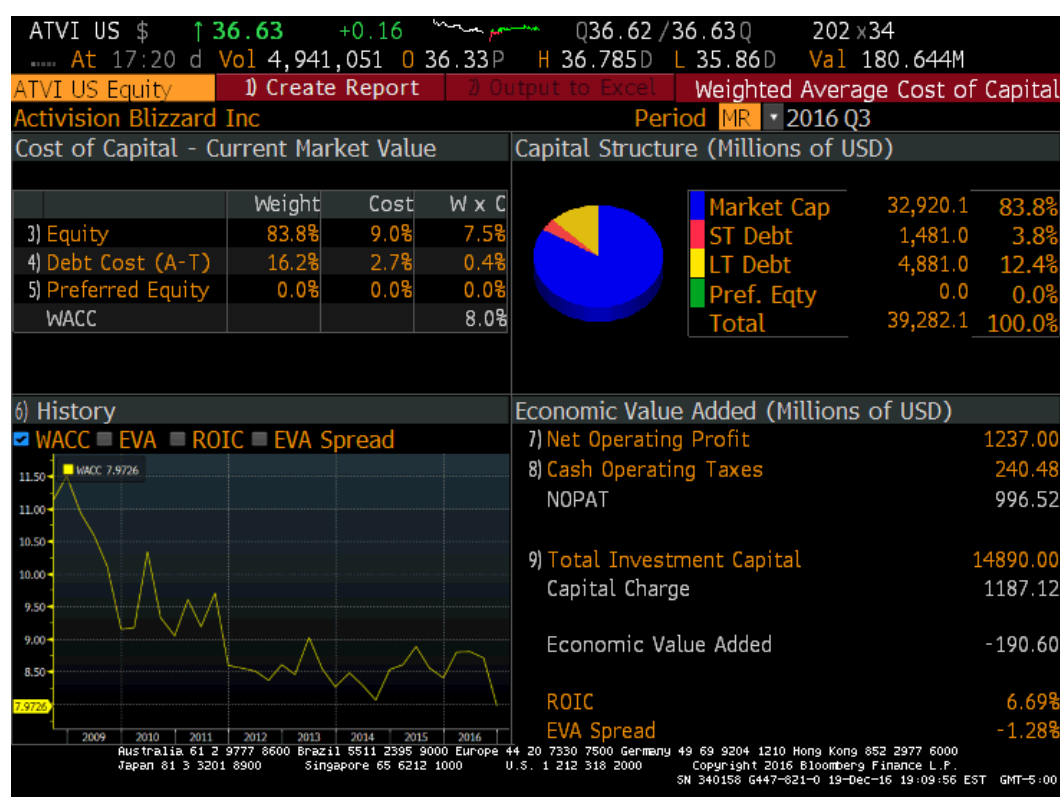
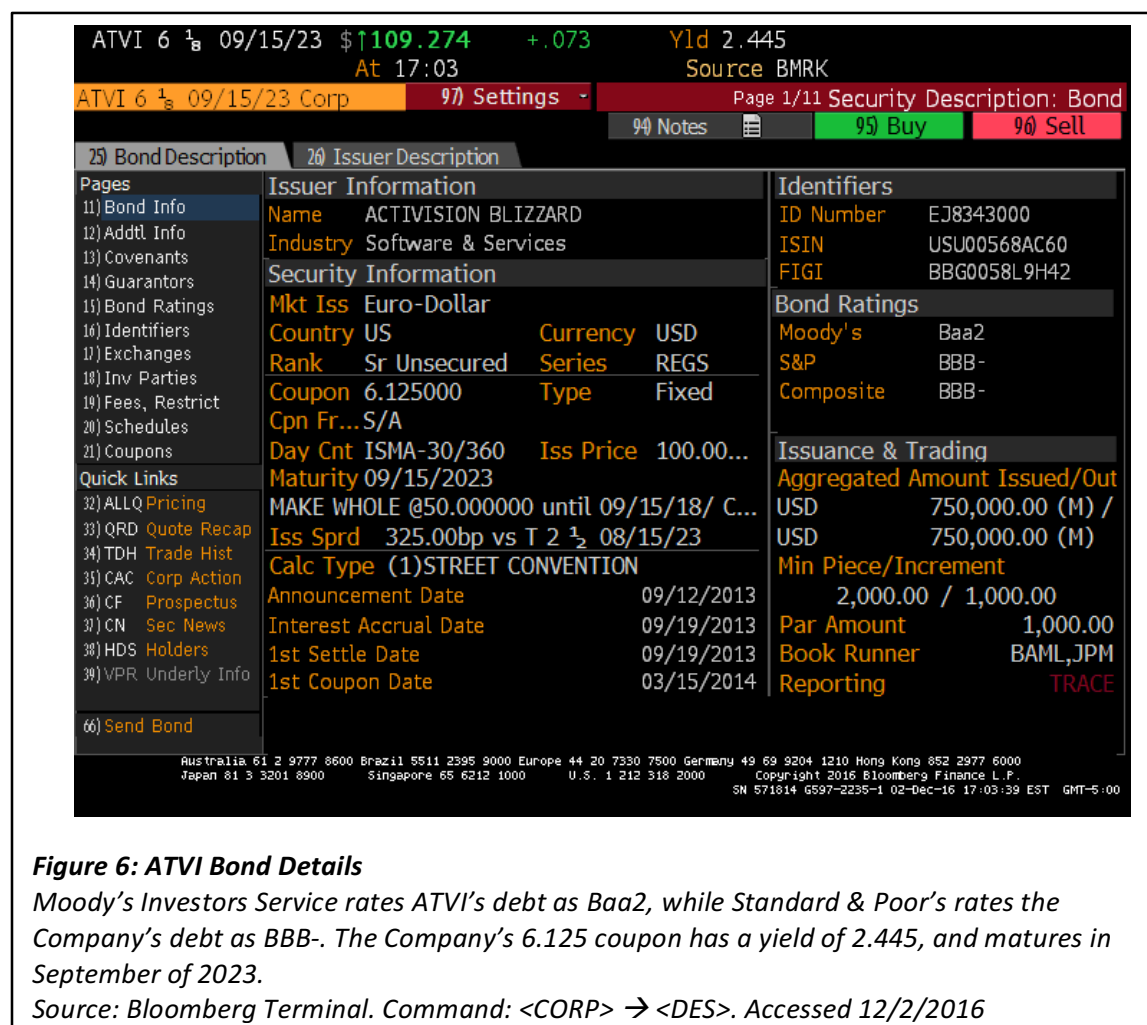


Figure 5: ATVI WACC

This figure details the Company's capital structure: the percent of ATVI owned by equity-holders versus deb- holders. 'WACC' stands for Weighted Average Cost of Capital.

Source: Bloomberg Terminal. Command: <WACC> . Accessed 12/2/2016

We can analyze The Company's fundamental health – by delving into ATVI's capital structure and publically traded debt. This will yield us useful information; specifically, is the recent sell-off driven mostly by sentiment or fundamentals? 16.2% of the Company is owned by debt-holders, while the remaining 83.8% is owned by equity-holders. More specifically, 12.4% of the capital structure is from Long-Term debt (Figure 5). This yields a gearing ratio (a ratio of a company's long-term debt to equity) of 0.19. Despite the fact that ATVI's 16.2% debt structure is relatively high compared to competitors – such as Electronic Arts Inc.'s 3.7% debt – The Company has proven their ability to use debt successfully and responsibly. As aforementioned, and as will be further discussed in this paper, ATVI's use of debt to re-purchase stock from Vivendi and to acquire King have proven to be strategically brilliant moves. ATVI has continued to grow its market capitalization and has seen an appreciation in their stock price. The 16.2% debt structure should not be a point of concern for investors, as ATVI's management have proven their ability to allocate capital optimally in their efforts to drive shareholder return.



Moody's and S&P's ratings of ATVI's debt as Baa2 and BBB-, respectively, indicate that both ratings agencies view the Company's debt as investment-grade (Figure 6). Under ATVI's 'Issuance & Trading' information, we see that the bond's amount issues are equal to the amount outstanding, indicating that this specific bond is fairly liquid. Given that investors in the bond market are incredibly critical in their analysis of company debt, and fully scrutinize a company's debt before investing, potential ATVI shareholders should take comfort in these ratings and metrics. The company's debt ratings and bond analysis can serve as a litmus test before deciding whether or not to purchase a company's debt; ATVI passes this litmus test.

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11/29	13:34:36	5000+ e	195.396	3.972	B	D	C	166.2	T 2 11/15/26		11/29	13:32:31			m	
11/28	16:00:46	5000+ e	195.457	3.964	B	D	C	165.1	T 2 11/15/26		11/28	15:59:10			m	
11/22	15:59:23	5000	195.863	3.912	B	D	C	160.1	T 2 11/15/26		11/22	15:57:22			m	
11/16	17:05:32	5000	196.601	3.818	B	D	C	159.5	T 2 11/15/26		11/16	17:05:31			m	
10/24	16:06:30	5000+ e	199.624	3.445	B	D	C	168.3	T1 1/2 08/15/2		10/24	16:05:20			m	
10/18	16:35:53	5000+ e	100.156	3.381	S	D	C	163.9	T1 1/2 08/15/2		10/18	16:33:50			m	
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Figure 7: ATVI Bond Trading Price

ATVI's bond trades – in quantities over 5,000 – and their prices from September through December of 2016.

Source: Bloomberg Terminal. Command: <QR>. Accessed 12/19/2016

Over the past three months, ATVI's bond price has decreased from approximately \$100 to approximately \$94 (Figure 7). The bond's yield has increased from 3.436% to 4.162% in the same period of time. This decrease in the bond price is correlated to the drop in ATVI's stock price over the past several months. As such, this drop in bond price does not seem to speak to the quality of the underlying debt in the Company's bond. A Quick Yield Analysis confirms ATVI's bond health. The current yield is 3.619%, whereas the bond's yield is 4.162% - a far cry from what we would expect for a distressed debt issuance from a company.

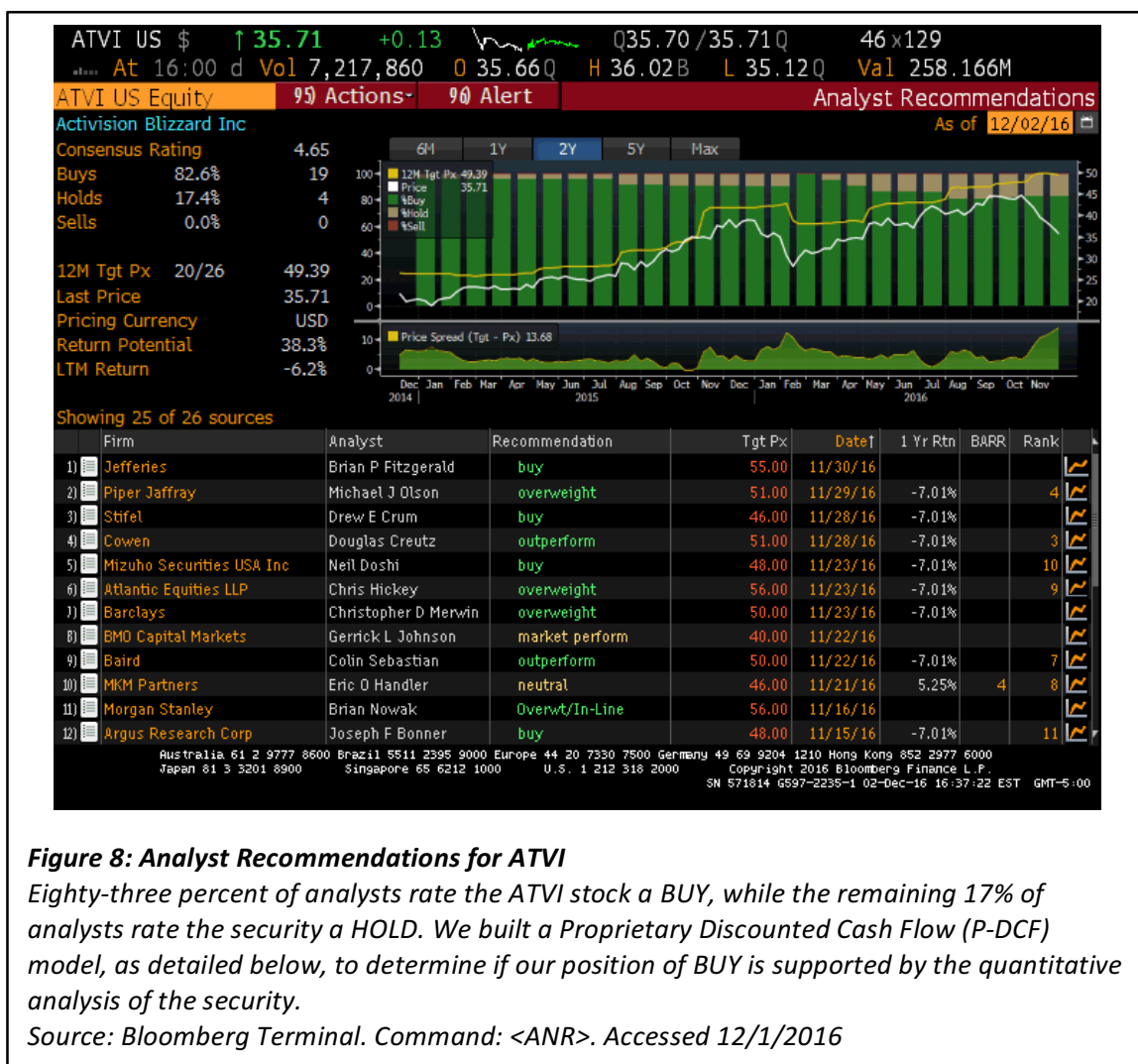


Figure 8: Analyst Recommendations for ATVI

Eighty-three percent of analysts rate the ATVI stock a BUY, while the remaining 17% of analysts rate the security a HOLD. We built a Proprietary Discounted Cash Flow (P-DCF) model, as detailed below, to determine if our position of BUY is supported by the quantitative analysis of the security.

Source: Bloomberg Terminal. Command: <ANR>. Accessed 12/1/2016

Additionally, as can be seen in Figure 8, the vast majority of analysts are bullish on the ATVI security lending credence to the health of the overall business. Analysts have been bullish on the Company's stock for months – even before a recent price decline, which makes the stock look particularly attractive at the moment. We will now delve into our model, and its underlying assumptions, to determine if we agree with these analysts and their “BUY” rating.

Model Assumptions

We use the P-DCF model to determine if the security under analysis is undervalued, overvalued, or fairly valued. Given the recent sell-off of ATVI that seems sentiment driven (as per the previous bond analysis), it will be important to determine the fundamental value distribution of ATVI and whether or not this represents a buying opportunity. At the root of this endeavor is the idea that the market is a voting machine, not a weighing machine. This idea, coined by Benjamin Graham, describes the biggest underlying assumption about this model: securities may be mispriced by market participants.

The P-DCF model typically uses historical averages for revenue growth, cost structure, working capital, and Capital Expenditures (CAPEX). However, given the historical trends, management guidance, and the nature of ATVI as a technology stock, we have altered a majority of our assumptions in order to better tailor the revenue, value drivers and cash flow drivers' growth rates to the Company. Historical long-term asset turns (LAT: Revenue/Long-term assets) are also used to gauge whether our assumptions are too aggressive or conservative.

For Console and Personal Computer (PC) revenue, for the 2016 fiscal year, we assumed that ATVI would grow their revenue by 30%, year-over-year (YoY). Meanwhile, we assumed that the Company's Online and Mobile & Ancillary segments would see a 5% increase in revenue growth. We assumed these percentages, which give ATVI a 21.37% revenue growth from 2015 to 2016, because management's guidance expects to reach \$6.13 billion in revenue by 2016. Given our assumptions, ATVI will reach \$5.62 billion in revenue by 2016, which is relatively conservative. Given that the 30% growth assumption for ATVI's console and PC segments is unsustainable, we decreased the growth rates for both segments so that they would plateau at 10% from 2021 through 2025.

We grew revenue aggressively for the first few years of our projections, and then attenuated the growth to represent market saturation, the presence of competitors, and to create a conservative tapering-off effect. The decision to treat our assumptions in such a manner helped us keep our total revenue CAGR at a relatively conservative level.

The cost structure is another major area where assumptions play an important role. For Cost of Sales, we assumed 35% of sales. Despite the historical average of 37.1%, we assumed 35% because of the steadily declining margin over the last 8 years. Similarly, we set General and Administrative costs at 7% of revenue, despite the 10% historical average, because of the downward trend. On the other hand, we set Sales and Marketing costs at 14% of revenue, slightly above the 13.7% average, because of an upward trend in the cost as a percent of revenue.

We set Change in Working Capital to zero, despite the -4% historical average. We felt that keeping -4% for Change in Working Capital was too aggressive and unrealistic of an assumption to make when modeling out ATVI into perpetuity. Moreover, we assumed that Capital Expenditures would equal Depreciation and Amortization, at 2.4% of revenue, into the future.

Balance Sheet and Income Statement Trends

These results are contained in the 'Balance Sheet' and 'Income Statement' tabs of the accompanying spreadsheet.

ATVI's "cash and cash equivalents" line on the Balance Sheet drops drastically in 2015, and as a result, the Company's "cash in escrow" line spikes for the equivalent amount. This shift in cash on the Balance Sheet is attributed to ATVI's acquisition of King Digital Entertainment Plc.

The Company's Long-term debt spiked to approximately \$4.6 billion in 2013, from 0 in 2012. This is due to ATVI's acquisition of approximately 429 million ATVI shares and certain tax attributes from Vivendi (Euronext Paris: VIV).

ATVI's Income Statement is generally straightforward, and lacks any huge changes, year-over-year. One of the most important trends to pay attention to is the YoY change in Product Sales versus the YoY change in Subscription, Licensing, and Other Revenues. ATVI's revenue from Product Sales has been consistently decreasing since 2011, while their revenue from Subscription, Licensing, and Other Revenues has been steadily increasing since 2011.

Value Drivers Tab

These results are contained in the 'Value Drivers' tabs of the accompanying spreadsheet.

In order to accurately forecast ATVI's future free cash flow, we must understand the Company's historical performance. Therefore, we determined the Company's historical margins and value drivers. ATVI has above a 5% standard deviation for its revenue growth rate, which makes it difficult to predict the Company's revenue growth rate for any particular year. Additionally, the Company has a historical average Change in Working Capital of -4%, with a standard deviation of 4.75%. Lastly, ATVI's standard deviation on its yearly Capital Expenditures margin (as a percent of revenue) is approximately 40%, meaning this line item fluctuates wildly, and is extremely difficult to predict. The historical average for CAPEX margin is approximately 24%. ATVI's CAPEX is relatively high for a number of reasons. First of all, our P-DCF model defines CAPEX as:

$$\text{CAPEX} = (\text{Long-term Assets})_t - (\text{Long-term Assets})_{t-1} + (\text{D\&A})_t.$$

Moreover, the Company's long-term assets have increased due to their acquisitions. As a result, ATVI's historical CAPEX averages may not be the most reliable input parameters into our model. However, the CAPEX averages reflect the Company's willingness to make large acquisitions, which have historically ameliorated ATVI's revenue generation.

Model Results

After carefully examining ATVI's historical performance, trends in revenue growth, patterns in cost margins (on revenue), and management's guidance, we inputted our precisely calibrated assumptions into our model. Our P-DCF model yields a probable free cash flow of \$43.36 per share of ATVI. This means that ATVI is currently trading at a 22.63% discount at \$35.58 (as of this writing, 12/1/16 – Figure 9). Considering that ATVI is a growing technology company, we found it appropriate to incorporate moderate-to-aggressive revenue growth assumptions in our model. Given these revenue assumptions, and other cost assumptions grounded in historical trends, our per-share target price is significantly above ATVI's current per-share price.

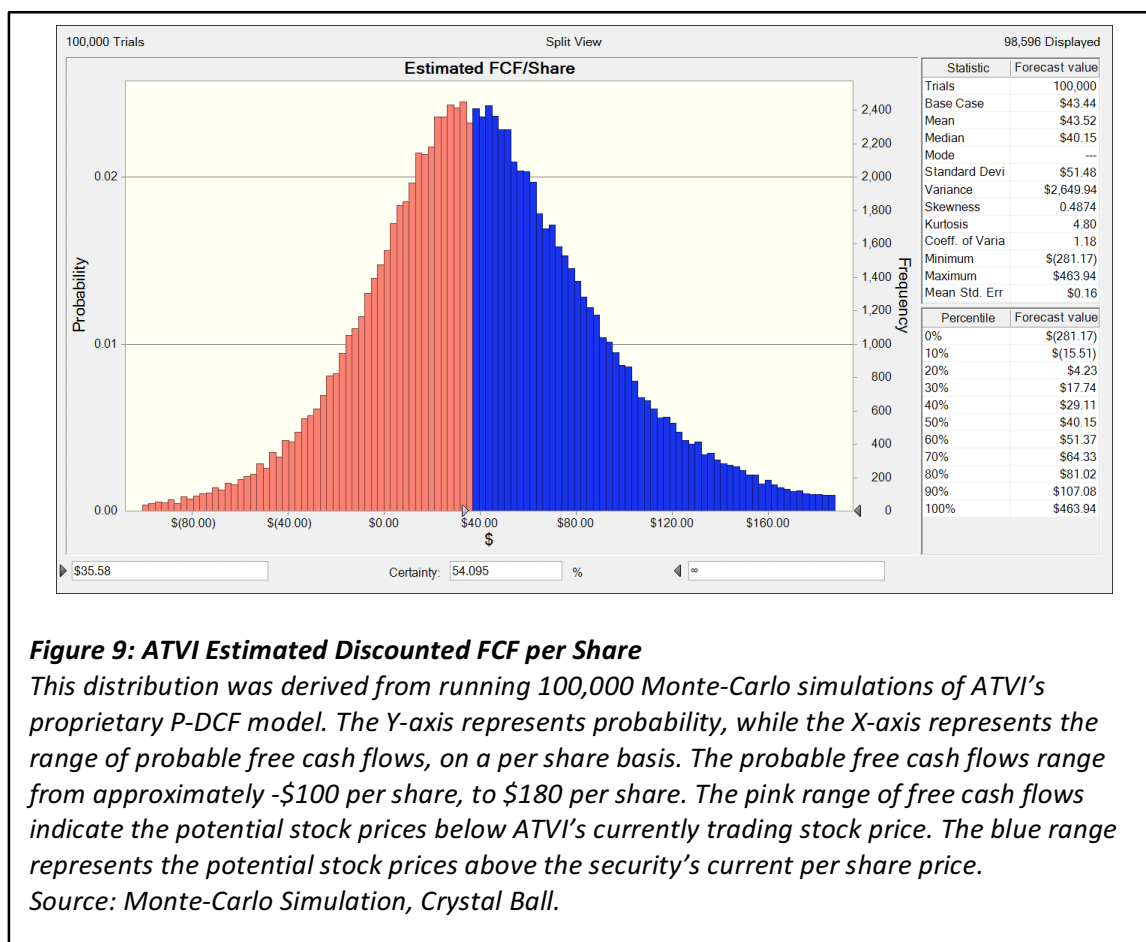


Figure 9: ATVI Estimated Discounted FCF per Share

This distribution was derived from running 100,000 Monte-Carlo simulations of ATVI's proprietary P-DCF model. The Y-axis represents probability, while the X-axis represents the range of probable free cash flows, on a per share basis. The probable free cash flows range from approximately -\$100 per share, to \$180 per share. The pink range of free cash flows indicate the potential stock prices below ATVI's currently trading stock price. The blue range represents the potential stock prices above the security's current per share price.

Source: Monte-Carlo Simulation, Crystal Ball.

Furthermore, our Monte Carlo simulation shows that the target stock price projected by our P-DCF model falls in the mid-50th percentiles of the estimated FCF/share distribution, while the current price sits in the 40th percentiles. This Monte Carlo simulation tells us that a slightly higher stock price (as represented by discounted free cash flows, per share) is more likely to occur for the Company than its current stock price. In other words, at \$35.58/share, the security is most likely trading at a discount to its intrinsic value.

The wide distribution on the Monte Carlo simulation above, from -\$90 to \$180 per share, is reflective of the high standard deviations on ATVI's historical revenue growth, Capital Expenditures (margin on revenue), and Change in Working Capital. This is not uncommon with a high-growth company such as ATVI and reflects the uncertainty in future forecasts. However, to ensure that management is incentivized to create long-term shareholder value, we inspected management compensation in the following section to assess whether management has motive consistent with our investment thesis.

Management Compensation

These results are based on an in-depth analysis of the proxy statement: SEC Filing DEF-14A.

We dissected management's compensation in order to determine if management is incentivized to drive shareholder returns consistent with our investment thesis.

Management compensation is an important indicator of a company's direction, given that management has the discretion to allocate capital. Thus, the analysis in this section helps us determine whether or not the ATVI executive compensation package aligns management's interests with those of the shareholders.

Robert A. Kotick serves as the Company's President and CEO. Prior to assuming his role in ATVI, Mr. Kotick, age 53, served as CEO of Activision Inc. (1991-2008). Mr. Kotick also sits on the board of directors of The Coca-Cola Company.

According to Activision Blizzard's 2016 proxy statement, executive compensation is divided into three segments, as follows:

1. Base Salary
2. Annual Cash Incentives (Cash Bonuses)
3. Equity Awards

Base Salary

Salary increases for Activision's named executive officers ranged from 4% to 5% of previous year's base salaries during the 2015 annual review of executive base salaries. The salary increases were based on individual performance and comparable competitive market rates.

Annual Cash Incentives (Cash Bonuses)

In 2015, the named executives received 81% to 108% of their performance-based cash incentives goals, under Activision's Corporate Annual Incentive Plan (CAIP). 60% of executive's target opportunity under the CAIP is weighted base on the following financial measures:

- Adjusted non-GAAP operating income
- Non-GAAP diluted earnings per share
- And/or adjusted non-GAAP free cash flow

The remaining 40% of the target opportunity was based on specific and measurable individual performance measures that ATVI's Compensation Committee believes supported the Company's overall strategy.

If Activision's adjusted non-GAAP operating income does not reach 85% or more of the adjusted non-GAAP operating income target for the year, the Company's Compensation Committee reduced or eliminates all bonuses under the CAIP.

The compensation committee establishes limits on the payment made under the CAIP for "overachievement," capping payments in respect of individual performance measures at 120% of target, and payments in respect of financial performance measures at 150% to 200% of target.

Year Ended December 31, 2015	Operating Income	Net Income	Basic Earnings (Loss) per Share	Diluted Earnings (Loss) per Share
GAAP Measurement	\$ 1,319	\$ 892	\$ 1.21	\$ 1.19
Less: Net effect from deferral of net revenues and related cost of sales ^(a)	39	19	0.02	0.02
Less: Stock-based compensation ^(b)	92	65	0.09	0.09
Less: Amortization of intangible assets ^(c)	11	8	0.01	0.01
Less: Fees and other expenses related to acquisitions ^(d)	5	5	0.01	0.01
NON-GAAP MEASUREMENT	\$ 1,466	\$ 989	\$ 1.34	\$ 1.32

Table 2: Reconciliation of GAAP Operating Income to Non-GAAP Measures
This table details the changes in ATVI's accounting measures for operating income, from GAAP to non-GAAP.
Source: ATVI's SEC 10-K filings

Equity Awards

Named executive officers do not generally receive annual equity awards. No named executive officer received an equity award during 2015.

However, equity awards made in connection with a new or amended employment agreement with an executive officer should include an award with performance-based vesting criteria. Certain restricted share unit awards made Messrs. Kotick, Durkin, Tippl and Hirshberg during or prior to 2015 have vesting that is contingent on the achievement of specified profitability-focused performance objectives.

The Compensation Committee chooses performance objectives that relate to measures of overall Company performance. For the performance awards to Mr. Kotick, vesting is based on non-GAAP diluted EPS, adjusted non-GAAP free cash flow and relative total shareholder return. For Mr. Durkin, vesting is based on non-GAAP diluted EPS. For Mr. Tippl, vesting is based on non-GAAP diluted EPS, adjusted non-GAAP free cash flow and Blizzard Entertainment's adjusted non-GAAP operating income. For Mr. Hirshberg, vesting is based on Activision Publishing's adjusted non-GAAP operating income.

Stock Ownership Guidelines

In 2012, Activision's Compensation Committee adopted guidelines requiring the CEO to own shares of common stock with a value at least equal to three times his/her annual base salary, and requiring each other executive officer to own common stock with a value at least equal to his/her annual base salary. The executive officers must accumulate said amount of stock within five years.

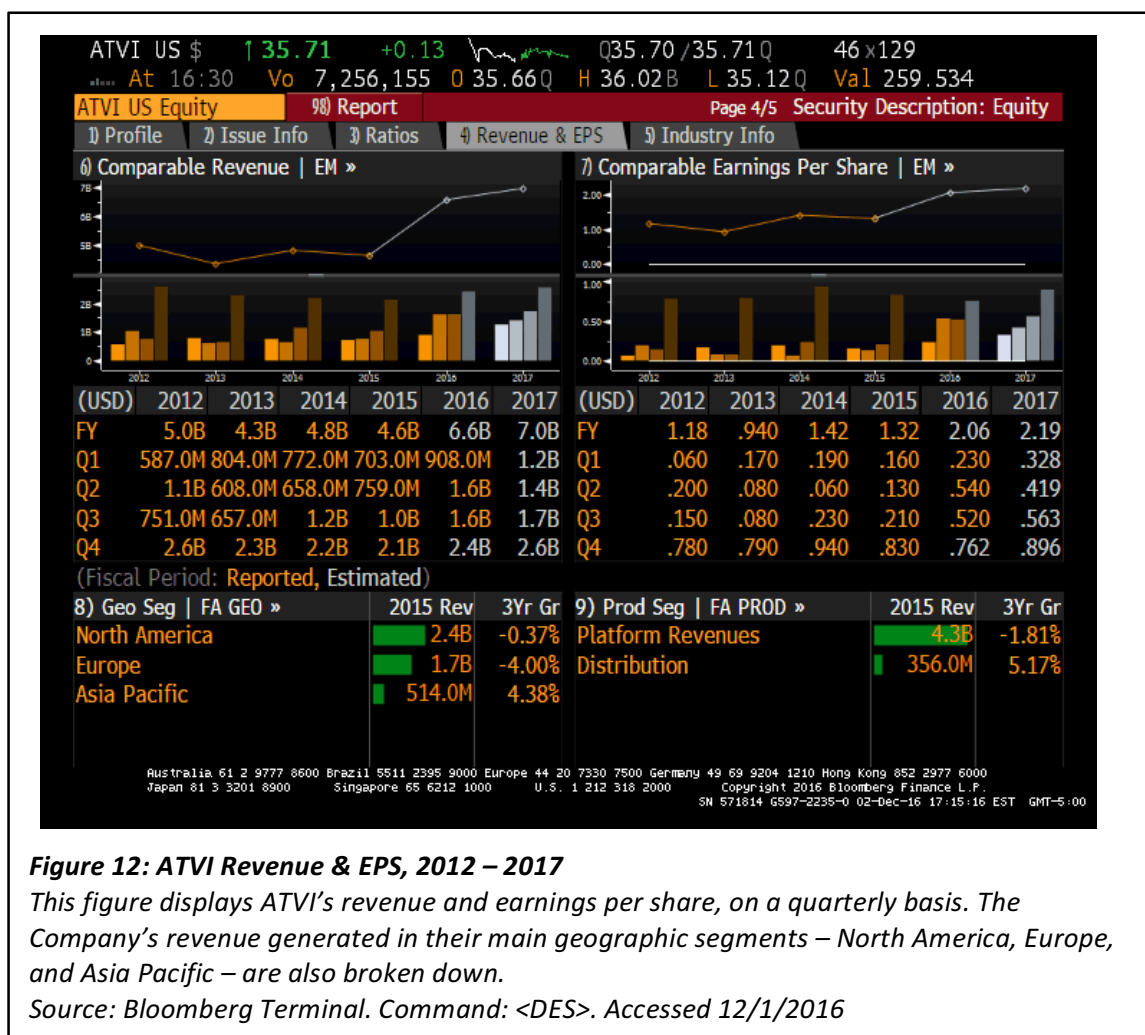
Table 5: Peer Company Compensation Reference



Multiples



As seen in the Figure 11 above, ATVI's Price to Book Value (P/B) ratio spiked since the start of 2016, reaching a P/B of approximately 3.84. According to this P/B ratio, the ATVI stock was being valued at approximately \$68 on a per-share basis. Given that 3.84 is the highest P/B ratio that ATVI had seen in the past 8 years, this figure may indicate that the Company's shares were being overvalued, according to the 8-year historical average. However, since that peak, the Company's P/B ratio has dropped significantly, to approximately 3.01 (at the time of this writing, 12/1/2016).



As can be seen in Figure 12 above, ATVI's revenue and earnings per share (EPS) have been somewhat inconsistent since 2012 (and, as can be seen in the accompanying excel model's historical revenue, has a high standard deviation over the past 8 years). On a quarterly basis, there is a clear trend: Q4 revenue and EPS are significantly higher than any other quarter, as ATVI sells the most products during the holiday season. ATVI is expected to generate solid revenue and EPS for 2016, and continue their growth into 2017.



ATVI's P/E ratio spiked from approximately 30 to 40, from Q1 until Q3 of 2016. However, since the start of the Company's Q3, ATVI's Price to Earnings ratio dropped to 31.7, below the industry average of approximately 40. As aforementioned, this un-constituted price drop is a great sign for potential investors, who now have the opportunity to purchase the security at a temporary discount.

[Holders and Insider Trading](#)

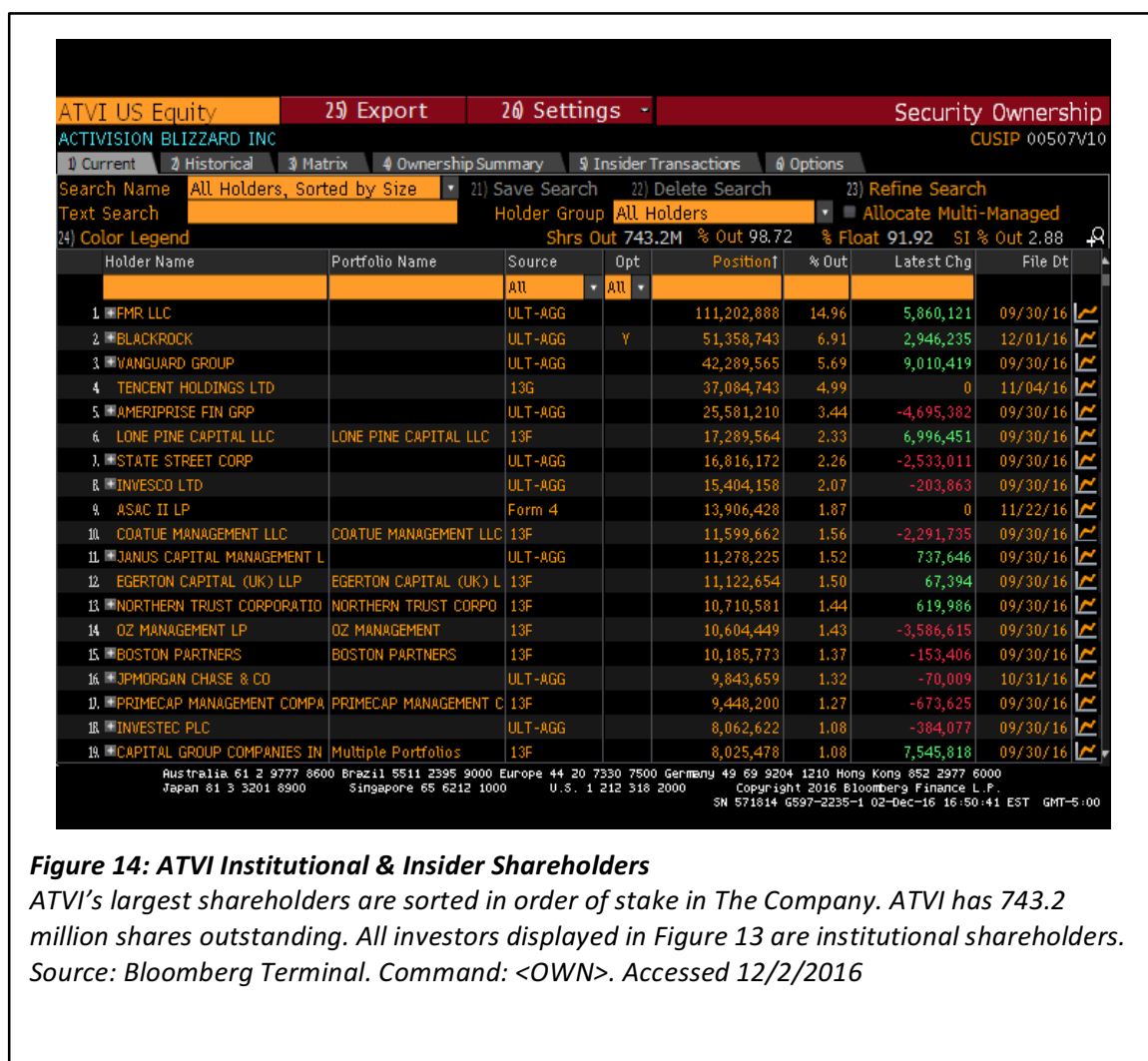


Figure 14: ATVI Institutional & Insider Shareholders

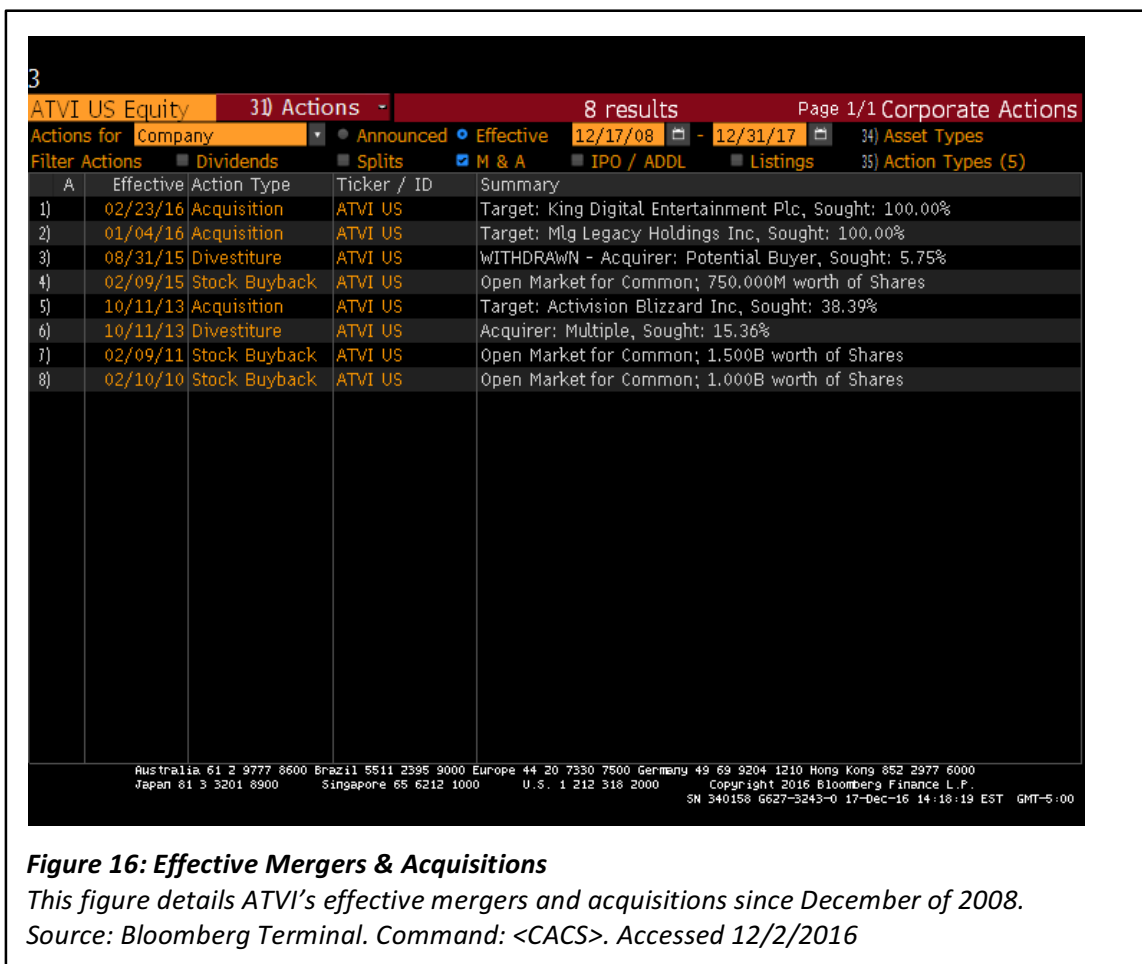
ATVI's largest shareholders are sorted in order of stake in The Company. ATVI has 743.2 million shares outstanding. All investors displayed in Figure 13 are institutional shareholders. Source: Bloomberg Terminal. Command: <OWN>. Accessed 12/2/2016

Fidelity Investments (FMR LLC), BlackRock, and Vanguard Group have 14.96%, 6.91%, and 5.69% stakes in ATVI, respectively. In September of 2016, Fidelity and Vanguard acquired 5.86 and 9.01 million shares in the Company, respectively. BlackRock increased their stake in ATVI by 2.95 million shares on December 1 of 2016. This recent acquisition is a great sign for a potential ATVI shareholder, as it shows the confidence of an institutional investor in the security, and its recent deviation from its fundamental value.



The largest sell-off in the past year took place in June of 2016, as Blizzard CEO sold 436 thousand shares of the ATVI security. More recently, in August of 2016, ATVI Director Peter Nolan purchased 20,000 shares. Mr. Nolan is a senior advisor to Leonard Green Partners, a private equity firm based in Los Angeles, CA.

Corporate Actions



ATVI has had three effective acquisitions since 2008.

ATVI's most recent and notable acquisition took place in February of 2016, when ATVI sought and acquired 100% of King Digital Entertainment PLC (King). King is an interactive entertainment company which produces and distributes digital games on multiple platforms in the U.S., U.K., Germany, and other countries. King's main games are the Candy Crush Saga, Candy Crush Soda Saga, Farm Heroes Saga, Pet Rescue Saga, and Bubble Witch 2 Saga. One of the Company's main goals in acquiring King was to increase revenue generation through ATVI's 'mobile and ancillary' business segment. King's impressive success and revenue generation are a testament to ATVI's management, and their ability to strategically and successfully allocate capital.

In October of 2013, the Company sought and acquired 38.39% of ATVI shares from its former parent, Vivendi SA. By the end of this acquisition, Vivendi SA was no longer the parent company of ATVI.

In January of 2016, ATVI sought and acquired 100% of MLG Legacy Holdings Inc. MLG Legacy Holdings, Inc. is an eSports company, which operates: MLG.tv, an online broadcast network for professional level competitive gaming; MLG Pro Circuit, an eSports league in North America; and GameBattles, a platform online gaming tournament system with users worldwide.

ATVI US \$ ↑ 35.71 +0.13  Q35.70/35.71Q 46x129				
At 16:30 d Vol 7,256,155 O 35.66Q H 36.02B L 35.12Q Val 259.534M				
ATVI US Equity 3D Actions - 47 results Page 1/2 Corporate Actions				
Actions for Company • Announced • Effective 12/02/15 - 12/31/17 34) Asset Types				
Filter Actions Dividends Splits M & A IPO / ADDL Listings 35) Action Types				
A	Effective	Action Type	Ticker / ID	Summary
1)	10/19/16	Debt Redem-Cal	US00507VAC37	Full, USD 1.500 MMM at 104.22%, Effective 10/19/16
2)	10/19/16	Debt Redem-Cal	USU00568AB87	Full, USD 1.500 MMM at 104.22%, Effective 10/19/16
3)	09/30/16	Incremental Am	BL222850	Amount Borrowed Decreased
4)	09/30/16	Incremental Am	BL196357	Amount Borrowed Increased
5)	09/14/16	Debt Off-New	US00507VAG41	USD 2.3% 09/21; 650.000 MM, 99.88%
6)	09/14/16	Debt Off-New	USU00568AD44	USD 2.3% 09/21; 650.000 MM, 99.88%
7)	09/14/16	Debt Off-New	US00507VAJ89	USD 3.4% 09/26; 850.000 MM, 99.61%
8)	09/14/16	Debt Off-New	USU00568AE27	USD 3.4% 09/26; 850.000 MM, 99.61%
9)	08/24/16	Incremental Am	BL189506	Amount Borrowed Decreased
10)	08/24/16	Incremental Am	BL107477	Amount Borrowed Decreased
11)	08/24/16	Issue Status	BL189506	From Signed to Refinanced
12)	08/24/16	Issue Status	BL107477	From Signed to Refinanced
13)	08/23/16	Maturity Change	BL196357	Amendment: Maturity Extended
14)	08/23/16	Maturity Change	BF107472	Amendment: Maturity Extended
15)	08/23/16	Facility Amount	BF107472	Amendment: Facility Amount Decreased
16)	08/23/16	Loan Pricing Gri	BL196357	Amendment: Loan Pricing Grid Change
17)	08/23/16	Non-Material Am	BL196357	Amendment: Non-Material Amendment; No major structural changes
18)	08/23/16	Incremental Am	BL222850	Amount Borrowed Increased
19)	08/23/16	Issue Status	BL222850	From Genl Syndication to Signed
20)	08/04/16	Incremental Am	BL196357	Amount Borrowed Increased
21)	06/30/16	Incremental Am	BL107477	Amount Borrowed Increased
22)	06/30/16	Incremental Am	BL196357	Amount Borrowed Increased
23)	06/02/16	Corp Meeting	ATVI US	Type: Annual Shareholder
24)	05/09/16	Incremental Am	BL196357	Amount Borrowed Increased

Figure 17: Effective Corporate Actions

ATVI's loan pricing, amounts, rates and debt repayment are listed under the "Action Type." The summary of these effective actions are listed in the last column, under "Summary," while the dates of the actions are listed under the second column, titled "Effective."

Source: Bloomberg Terminal. Command: <GPTR>. Accessed 12/2/2016



ATVI has been paying dividends since 2010. The Company has steadily and consistently increased their dividends for all six years during which they have paid dividends. The cash dividends have increased from 16 cents per share in 2010, to 26 cents per share in 2016.

Within each fiscal year, ATVI's quarterly earnings per share (EPS) fluctuate significantly. This is due to the cyclical nature of ATVI's business, which sees a spike in sales during the holiday season (typically December through January).

On a YoY basis, the consistency and reliability from the Company's dividend payout shows management's top-tier ability to run ATVI smoothly, and to generate profits – year after year.

Conclusions

ATVI is an exceptionally managed company whose executives, particularly CEO Bobby Kotick, are incentivized so that their interests are aligned with those of the shareholders. We have confidence that the Company's management will deploy capital to develop products and services that continue to provide growth for the Company, and create higher shareholder value. ATVI's Call of Duty, Destiny, Candy Crush, etc. prove that the Company's human capital has the ability to produce top-tier products. The Company has also positioned themselves well for the future, as they have created incredible market dominance in eSports with their Major League Gaming (MLG) division reflecting management's ability to be forward thinking.

Considering the results obtained from our P-DCF in conjunction with our Monte Carlo simulation, and our overall qualitative and quantitative analysis of the Company, we believe that the market is currently undervaluing the ATVI security. We view this investment opportunity as a play on a proven growth company, trading at a discounted price. Given ATVI's dislocation from its fundamental value (as defined by our P-DCF model), we rate ATVI as a BUY.

Appendix

Management's high level of stock ownership has allowed them to run ATVI efficiently, while driving shareholder return. Tables A1 and A2 display ATVI's executive compensation, as they relate to security ownership and non-equity payment. Furthermore, Figure 1A illustrates management's share buy-back program.

Name	Shares of Activision Blizzard Beneficially Owned			Percent of Outstanding Shares ⁽²⁾
	Shares Owned	Right to Acquire ⁽¹⁾	Total Shares Owned plus Right to Acquire	
Robert J. Corti	138,518 ⁽³⁾	88,000 ⁽⁴⁾	226,518	*
Dennis Durkin	258,925	187,500 ⁽⁴⁾	446,425	*
Hendrik Hartong III	13,051 ⁽⁵⁾	2,216 ⁽⁶⁾	15,267	*
Eric Hirshberg	0	0	0	*
Brian G. Kelly	174,060,684 ⁽⁷⁾	280,683 ⁽⁸⁾	174,341,367	23.66%
Robert A. Kotick	176,142,043 ⁽⁹⁾	3,997,348 ⁽¹⁰⁾	180,139,391	24.44%
Barry Meyer	24,407 ⁽¹¹⁾	0	24,407	*
Robert J. Morgado	300,260 ⁽¹²⁾	193,000 ⁽⁴⁾	493,260	*
Michael Morhaime	314,126 ⁽¹³⁾	1,171,773 ⁽¹⁴⁾	1,485,899	*
Peter Nolan	41,818 ⁽¹⁵⁾	0	41,818	*
Thomas Tipl ⁽¹⁶⁾	512,895	44,427 ⁽⁴⁾	557,322	*
Casey Wasserman	4,433	2,216 ⁽⁶⁾	6,649	*
Elaine Wynn	29,018	0	29,018	*
All current directors and executive officers as a group (15 persons)	179,948,789 ⁽¹⁷⁾	5,990,232 ⁽¹⁸⁾	185,930,021	25.23%

* Less than 1%.

Table A1: Security Ownership of Officers & Directors (April 1, 2016)

This table details the the different equity ownership stakes in ATVI by The Company's executives and directors. CEO Bobby Kotick and Chairman of the Board Brian Kelly own 24.4% and 23.7% of shares outstanding, respectively.

Source: ATVI's SEC 10-K filings

Name and Principal Position	Year	Salary (\$)	Bonus ⁽¹⁾ (\$)	Stock Awards ⁽²⁾ (\$)	Option Awards ⁽³⁾ (\$)	Non-Equity Incentive Plan Compensation ⁽⁴⁾ (\$)	All Other Compensation (\$)	Total (\$)
Robert A. Kotick President and Chief Executive Officer	2015	2,294,328	—	—	—	4,844,383	87,223 ⁽⁵⁾	7,225,934
	2014	2,196,616	—	—	—	4,595,173	87,023	6,878,812
	2013	2,108,077	—	—	—	7,849,190	88,169	10,045,436
Dennis Durkin Chief Financial Officer	2015	752,818	—	—	—	1,105,673	18,187 ⁽⁵⁾	1,876,678
	2014	713,737	—	—	—	597,248	17,855	1,328,840
	2013	679,625	627,353	—	—	765,008	30,540	2,102,526
Thomas Tipl Chief Operating Officer	2015	1,302,548	—	5,211,347 ⁽⁶⁾	—	2,362,589	43,858 ⁽⁵⁾	8,920,342
	2014	1,254,807	2,000,000	10,400,018 ⁽⁶⁾	—	1,970,862	33,969	15,659,656
	2013	1,001,258	627,353	—	—	1,325,400	87,220	3,041,231
Eric Hirshberg ⁽⁷⁾ Chief Executive Officer, Activision Publishing	2015	961,677	—	— ⁽⁸⁾	4,115,822	967,636	31,857 ⁽⁵⁾	6,076,992
Michael Morhaime President and Chief Executive Officer, Blizzard Entertainment	2015	924,411	341,363	2,386,767	1,941,999	3,003,638	90,598 ⁽⁵⁾	8,688,776
	2014	886,603	328,234	1,407,000	1,120,000	4,042,955	71,495	7,856,287
	2013	861,076	319,449	1,240,400	1,014,666	2,065,678	61,794	5,563,063

Table A2: Executive Compensation Summary

ATVI's top executives received an average of \$6.6 million in compensation for the 2015 fiscal year. COO Thomas Tipl received the highest compensation (\$8.9 million), while CFO Dennis Durkin received the lowest (\$1.9 million).

Source: ATVI's SEC 10-K filings

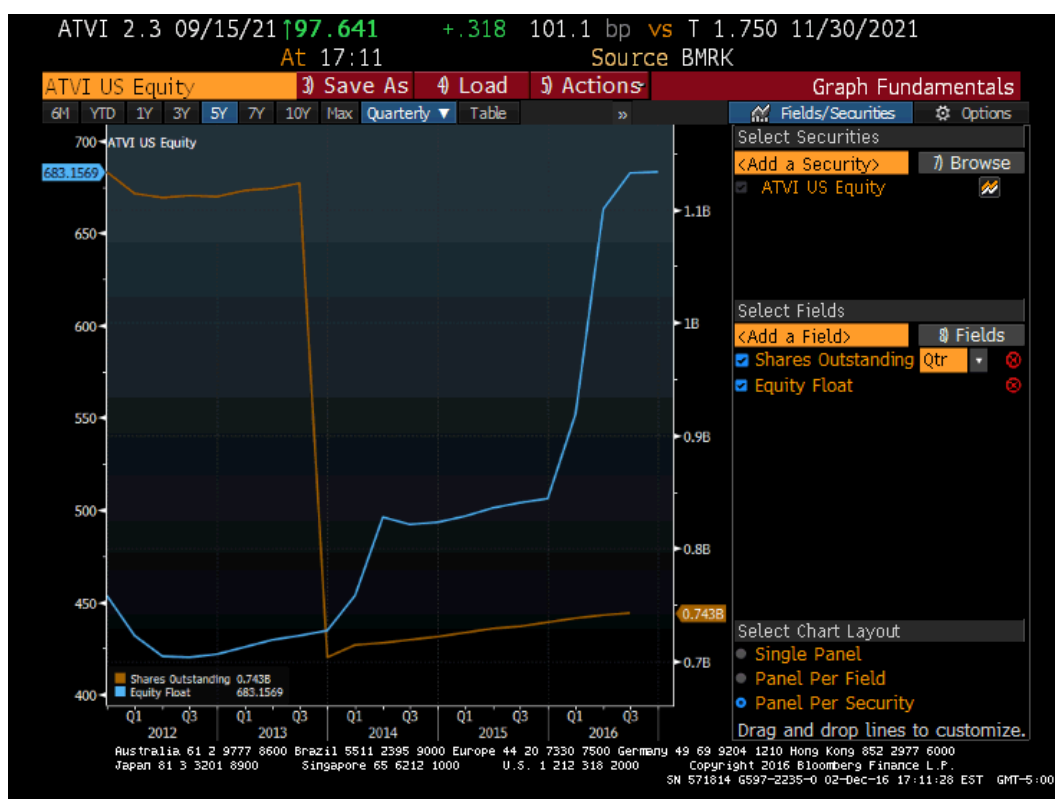


Figure A1: Shares Outstanding (orange) & Equity Float (blue), 2012 – 2016

There are currently 743 million shares of ATVI outstanding, while equity float is at 683 million shares. In Q4 of 2013, The Company's shares outstanding dropped from nearly 1.15 billion to just above 700 million shares. This drop in shares outstanding was the result of a major share buyback program, in which Activision bought a majority of shares from Vivendi (sending Vivendi's stake in the company from 61% to 12%).

Source: Bloomberg Terminal. Command: <GF>. Accessed 12/2/2016